

# Purchase Order Receipt Listing

Wednesday, April 12, 2017 2:10:03 PM

All amounts are calculated in domestic currency.

All Vendors PO ID PO35848 Receipt Dates from 4/12/2017 to 4/12/2017 All Line Item Types  
All Item ID/GL/WOs All Rec. Employees All Currencies  
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
<b>Vendor ID \ Vendor Name</b>											
<b>PO35848 TW Metals</b>											
USD	1	No	M304TR0.500W.035 f 304 RD Tube .500 x f .035W m137286 9.89		4/13/2017 20.0000	4/12/2017 PLOU01	20.0000	1.4	0.0000 0.0000	0 0	\$0.00
	2	No	M304TR0.500W.049 f 304 RD Tube .500 x f .049W 0.89 m137286 9.89		4/13/2017 20.0000	4/12/2017 PLOU01	20.0000		0.0000 0.0000	0 0	\$0.00
	3	No	M304TR0.675W.091 f 304 RD Tube .675 x f .091W		4/13/2017 20.0000	4/12/2017 LAVO01	23.6670		0.0000 0.0000	0 0	\$0.00
	4	No	M304TR0.750W.049 f 0.745 304 RD Tube .750 x f 0.745 .049W 9.89 m137286 9.89		4/13/2017 120.0000	4/12/2017 PLOU01	120.0000	1.4	0.0000 0.0000	0 0	\$0.00
	5	No	M304TR0.875W.065 f 304 round tube .875 x f .065W 9.89 m137286 9.89		4/13/2017 20.0000	4/12/2017 PLOU01	20.0000		0.0000 0.0000	0 0	\$0.00
	6	No	M4130N10.750W.04 f 9 4130 RD Tube .750 f x.049W m137286		4/13/2017 20.0000	4/12/2017 PLOU01	24.0000		0.0000 0.0000	0 0	\$0.00
	7	No	M6061T6T0.3125W.0 f 58 ALUM TUBE .3125 f x .058W 9.89 m137286		4/13/2017 20.0000	4/12/2017 PLOU01	24.0000		0.0000 0.0000	0 0	\$0.00

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Sid	PO U/M / Stock U/M	Required Date	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
<b>Vendor ID \ Vendor Name</b>											
PO35848	8	VU-TW/M001	TW Metals M6061T6T0.625W.06 f	0.632	4/13/2017	4/12/2017	48.0000	6.25	0.0000	0	\$0.00
USD	No		6061T6 RD Tube .625 x .065W m137286	f	40.0000	PLOU01			0.0000	0	
	9		M6061T6T1.000W06 f	f	4/13/2017	4/12/2017	24.0000		0.0000	0	\$0.00
	No		6061T6 RD TUBE 1.00 x .065W m137286-89	f	20.0000	PLOU01			0.0000	0	
<b>Total Received Quantity:</b> <b>Total Qty to Inspect (PO U/M):</b> <b>Total Reject Quantity:</b> <b>Total Receipt Value:</b> <b>Total Balance Due Quantity:</b>											
											323.6670
											0.0000
											0.0000
											\$0.00
											0.0000



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60629110

FROM: CRAN

PAGE 1

CUST NUMBER: 1203820 NET WGT: 85.382 REQ.DATE: 04/13/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 04/07/17  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO35848 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0001 36506 SMLS CD 304/L A269 1/2 OD X .049 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	20.000 FT	20.000 FT	4.718	1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49336439 HT:YX1506712 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:12-19

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	120.000 FT	120.000 FT	120.000 FT	44.006	6

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49342471 HT:YX1501783 PC: 6 CUSTOMER QTY: 120.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:11-63

0003 36969 SMLS CD 304/L A269 7/8 X .065 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	20.000 FT	20.000 FT	11.244	1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49339141 HT:YX1502577 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:2-122

SP 17-4-12

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



# Packing Slip

ORDER NO.: 60629110

FROM: CRAN

PAGE 2

CUST NUMBER: 1203820 NET WGT: 85.382 REQ. DATE: 04/13/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 04/07/17  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO35848 RELEASE NO.:  
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0004	33047 CDS 4130 6736	3/4 X .049	17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	24.000 FT	24.000 FT	8.801	1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00  
PO: 49353474 HT: 598618 PC: 1 CUSTOMER QTY: 24.000 UOM FT  
MLT: GERMANY MFG: GERMANY SLB/CL: 1625993

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
0005	42558 D6061-T6 5/8 OD X .065 WA			12 FT ML	

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	48.000 FT	48.000 FT	48.000 FT	6.428	4

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO: 49352984 HT: F002180450002 PC: 4 CUSTOMER QTY: 48.000 UOM FT  
MLT: UNITED STATES MFG: UNITED STATES SLB/CL: 220820

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
0006	43284 D6061-T6 1 OD X .065 WA			12 FT ML	

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	24.000 FT	24.000 FT	24.000 FT	5.400	2

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO: 49364165 HT: F002341330002 PC: 2 CUSTOMER QTY: 24.000 UOM FT  
MLT: UNITED STATES MFG: UNITED STATES SLB/CL: 222450

## THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing Slip**

ORDER NO.: 60629110 FROM: CRAN PAGE 3

CUST NUMBER: 1203820 NET WGT: 85.382 REQ. DATE: 04/13/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 04/07/17  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO35848 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0007 36476 SMLS CD 316/L A269 1/2 OD X .035 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.000 FT	20.000 FT	3.475

PCS  
1

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49336435 HT:YX1506597 PC: 1 CUSTOMER QTY: 20.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:11-93

0008 41723 D6061-T6 5/16 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	24.000 FT	24.000 FT	24.000 FT	1.310

PCS  
2

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49354489 HT:388604 PC: 2 CUSTOMER QTY: 24.000 UOM FT  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:422327

BROKERS KUEHNE AND NAGEL LTD

SP174-12

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
B	REDDICRATE	1.000	154.000		24.5000	

1.000 154.000

BY: WN  
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

1

DATE FILLED

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60629110

FROM: CRAN

PAGE 4

CUST NUMBER: 1203820 NET WGT: 85.382 REQ.DATE: 04/13/17 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 04/07/17  
TERMS: NET 30 DAYS 27 ENGLEHARD DRIVE  
F.O.B.: SHIPPING POINT MONROE TWP NJ 08831  
CUST ORD NO.: PO35848  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

**"CERTIFICATE OF CONFORMANCE"**

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

**Electronically Generated Document-Valid Without Signature** Date: 4/07/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>

## MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream				Certificate No.: 16-1-92					
Contract No.: TWM P.O.No.: M49336439				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1506-712	12-19	1/2" x 0.049" x 20'	2300	46,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.013	0.65	0.032	0.002	0.32	18.28	8.05	-	-
Product Analysis	0.017	0.61	0.033	0.002	0.28	18.31	8.55	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")	Tensile Strength (PSI) Rm		Yield Strength (PSI) Rp / 0.2%					
Requirements	≥35	≥75,000		≥30,000					
Test Results	63/64	97,000/98,000		43,000/44,000					
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**



By:

James Shi

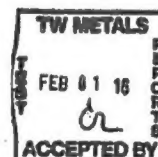
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-1-13					
Contract No.: TWM P.O.No.: M49342471				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions			Quantity			
TP304/TP304L	YX1501-783	11-63	3/4" x 0.049" x 20'			Pieces	Feet		
						250	5,000		
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	65/66		89,000/90,000			34,000/35,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	75/77	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**



By:

James Shi

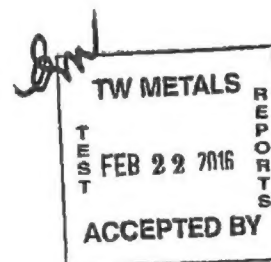
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-3-176					
Contract No.: TWM P.O.No.: M49339141				Date of Issue.: 2016.3.31					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1502-577	2-122	7/8" x 0.065" x 20'	75	1,500				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.009	0.63	0.030	0.001	0.34	18.30	8.05	-	-
Product Analysis	0.021	0.60	0.035	0.002	0.33	18.35	8.36	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	63/64		98,000/99,000			41,000/42,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	≥40	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-15
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**



By:

James Shi

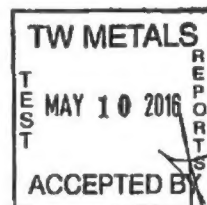
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666

# BENTELER

## Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1  
INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1  
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland  
TW Metals  
The Aboretum, Suite 204  
760 Constitution Drive  
EXTON PA 19341  
USA

Dokument-Nr.: Document No.: No. du document:	41-961797/001/P	Prüf-Nr.: Inspection No.: No. du certificat:		Blatt: Page: Page:	1 / 4
Kunden-Bestell-Nr.: Purchase Order No.: No. de commande du client:	46004384 TW M49353474	Hersteller: Manufacturer: Producteur:	Warmrohrwerk/Zieherei (DIN EN ISO 9001, ISO/TS-16949 CERTIFIED BY TUEV NORD CERT) (PED 2014/68/EU CERTIFIED BY TUEV NORD SYSTEMS)		
Benteler Auftrags-Nr.: Benteler Order No.: No. de commande Benteler:	1625993	Herstellerzeichen: Manufacturer's brand: Marque du producteur:			
Versandanzeigen-Nr.: Dispatch Note No.: No. d'avis d'expédition:	4170922	Stempel des Abnahmebeauftragten: Stamp of the inspection representative: Poinçon du contrôleur:	WA		
Produkt: NAHTLOSE STAHLROHRE Product: SEAMLESS STEEL TUBES Produit: TUBES D'ACIER SANS SOUDURE		Stahlschmelzungsverfahren: Steelmaking process: Procédé d'élaboration de l'acier:	ELEKTROSTAHL ELECTRIC FURNACE FOUR ELECTRIQUE		

AMS-T-6736B Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Lieferbedingungen:  
Terms of delivery:  
Conditions de livraison:

AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Maße - Toleranzen:  
Dimensions-tolerances:  
Dimensions-tolérances:

GRADE 4130

Stahlsorte:  
Steel grade:  
Nuance d'acier:

Condition N

Lieferzustand:  
Delivery condition:  
État de livraison:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.  
CD AQ S DIMENSIONS WA GERMANY

Produktkennzeichnung:  
Product marking:  
Marquage du produit:

AZZ = Ätzzeichenbeschriftung, Etching ink marking, Gravure à l'encre . PK = Farbklebmarkierung, color marking, marquage par couleur . FS = Farbschablonierung, paint stencilling, marquage par peinture . FSD = Farbstrahlendruck, Color jet printer, imprimants à jet d'encre de couleur . LK = Laserklebmarkierung, Laser marking, Marquage laser . PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette . PS = Prägestempel, die stamp, marquage par poinçonnage . TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimants à jet d'encre .

TW METALS  
REPORTS  
T. E. S. T  
OCT - 3 2016  
ACCEPTED BY

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-961797/001/P  
Document No.:  
No. du document:  
Prüf-Nr.:  
Inspection No.:  
No. du certificat:  
Blatt: 2 / 4  
Page:  
Page:

Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüdruck	Rohr-Nr.-Gruppe	Vierfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
		feet	feet	lbs				
0003	154	0.750" O.D. * 0.049" WT 20 FT ~ 24 FT	3688,32	1345	598618			

**Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,260	0,54	0,010	0,001	0,88	0,17	0,14	0,17

**Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,280	0,52	0,009	0,001	0,89	0,17	0,12	0,15

**Prüfergebnisse / Test results / Résultats des essais**

Die Rohre wurden zerstörungsfrei geprüft: The tubes are non destructive tested: Les tubes ont passé un essai non destructif:	ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for Imperfections; ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections; Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)	PASSED
--	---	--------

Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Materialverwechslungsprüfung: Material conformity test: Vérification de la nuance:	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:	PASSED
--	--------	--	--------	--	--------

**Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques**

Die Probenahme erfolgte an Vierfachlängen.  
The sampling was carried out on multiple lengths.  
L'échantillonnage était réalisé aux longueurs multiples.

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666



Steel/Tube

# ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Dokument-Nr.:  
Document No.:  
No. du document:

41-961797/001/P

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

Blatt: 3 / 4  
Page: 3 / 4

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen						
Requirements			mm	Rp 0,2 %	Rm	A2°
Exigences				KSI	KSI	%
0003	000001	598618	19,05 X	1,25	120	128
0003	000002	598618	19,05 X	1,25	120	128
0003	000003	598618	19,05 X	1,25	118	127
0003	000004	598618	19,05 X	1,25	120	128
0003	000005	598618	19,05 X	1,25	118	128
				MIN 75	MIN 95	MIN 12,00
						1. Formel
						1. Formula
						1. Formule

## Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0003

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization inside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.305 mm, without total decarburization; partial decarb. out. max.: 0,229 mm; partial decarb. ins. max.: 0,229 mm

## Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1

Pos. / Item / Poste: 0003

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0003

Magnetic particle inspection: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0003

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13686

**BENTELER** 

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

**INSPECTION CERTIFICATE EN 10204-3.1**

**CERTIFICAT DE RECEPTION EN 10204-3.1**

41-961797/001/P

Dokument-Nr.:  
Document No.:

No. du document:

Prüf-Nr.:  
Inspection No.:

No. du certificat:

Blatt: 4 /

Page: 4

Page: 4

Paderborn Schloß Neuhaus, 19.09.2016, TEL.: 05254.81-201765 FAX: 05254.81-201752

Abnahmebeauftragter

Inspection representative

Contrôleur

i.A. THOMAS GOLLAN / GUT

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.  
We certify that the supplied products comply with the order specifications. This document was prepared by means of electronic data processing and is valid without signature.

Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH  
Residenzstraße 1  
33104 Paderborn  
Germany  
Tel.: 49.5254.81-0 Fax: 49.5254.13668

**BENTELER**  
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang  
Inspection Certificate EN 10204.3.1 / appendix  
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.  
Document No.: 41-961797/001/P  
No. de document:

Blatt: von  
Page: 1 of 1  
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301K)		Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)	
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34	S max. 0,25	max. S 2	max. R 1 max. C 2
598618	003	9	42	34	0,029	0,024	S 2	R 1 C 2
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm					

**BENTELER**  
Steel/Tube GmbH

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Abnahmebeauftragter  
Inspection representative  
Contrôleur

Paderborn Schloß Neuhaus, 21.09.2016  
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

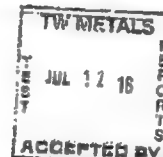
Thomas Gollan

# KAISER ALUMINUM FABRICATED PRODUCTS

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>



CUSTOMER PO NUMBER: M49352984-1		CUSTOMER PART NUMBER: 42558		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 220820	LINE ITEM: 001	SHIP DATE: 07/05/2016	KAISER LOT NUMBER: F00218045	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 558.000 LB	QUANTITY: 346.000 PCS	B/L NUMBER: 222226	DIAM/DAE/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00218045	0001	1	48.7	43.2	17.0	N/A	N/A	N/A
F00218045	0002	1	46.9	40.8	18.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76011	.60	.24	.23	.03	.97	.07	.05	.02	.00	.00	.00	.01	.03

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @  
AMS 4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00022478  
Kaiser Order Number: 220820  
Line Item: 001

UMB



**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

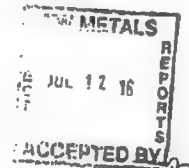
**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49364165-1		CUSTOMER PART NUMBER: 43284		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 222450	LINE ITEM: 001	SHIP DATE: 02/17/2017	KAISER LOT NUMBER: F00234133	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 582.000 LB	QUANTITY: 216.000 PCS	B/L NUMBER: 224379	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00234133	0001	1	47.2	40.1	20.0	N/A	N/A	N/A
F00234133	0002	1	46.8	40.4	20.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76511	.59	.28	.23	.06	.98	.08	.07	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.0650"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00024181  
Kaiser Order Number: 222450  
Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

*[Signature]*

Plant Serial: 00024181  
Kaiser Order Number: 222450  
Line Item: 001

## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-1-10					
Contract No.: TWM P.O.No.: M49336435				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP316/TP316L	YX1506-597	11-93	1/2" x 0.035" x 20'	500	10,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	16.00-18.00	10.00-14.00	2.0-3.0	-
Ladle Analysis	0.016	0.63	0.027	0.003	0.31	16.69	10.05	2.02	-
Product Analysis	0.016	0.61	0.032	0.007	0.34	16.67	10.35	2.03	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	63/64		88,000/89,000			41,000/42,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	76/78	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA

By:



James Shi

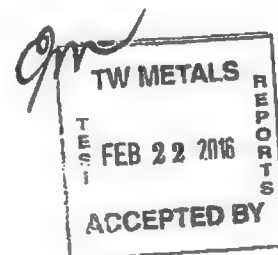
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





PRECISION TUBE CO.  
287 WISSAHICKON AVE.  
NORTH WALES PA 19454

Control No: 1604

### CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.	CUST. ORD. NO.	PRECISION TUBE P/N
49354489 LINE 001	422327	24A031250580005

**SOLD:** TW METALS  
**TO** 175 TUBEWAY  
FOREST PARK, GA 30298  
UNITED STATES

**SHIP:** TW METALS  
**TO** 175 TUBEWAY  
FOREST PARK, GA 30298  
UNITED STATES

QUANTITY ORD.	DESCRIPTION	QTY. SHIPPED	DATE SHIPPED
1824 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P ASTM-B-210-12 AMS-WW-T-700/6C LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3125 +.0030 -.0030 ID WALL .0580 +.0040 -.0040	2004 FT	08/05/16

### MECHANICAL PROPERTIES

SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	45,775	40,439	17		

### DESTRUCTIVE TESTS

Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES

### NON-DESTRUCTIVE TESTS

EDDY CURRENT: PASS

### CHEMICAL COMPOSITION

ALLOY: 6061		HEAT:		TRACEABILITY #: 388604					
				RAW MATL VENDOR: PTC2249 - Kaiser Aluminum					
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Min	0.40		0.15		0.80	0.04			Rem.
Max	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL									

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundary containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA  
QMS Registered to ISO 9001: 2008

By: Art Onatis  
Art Onatis  
QA Manager

08/05/16  
Page: 1 of 1

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

CUSTOMER PO NUMBER: PTC2249		CUSTOMER PART NUMBER: SPIRIT-371850		PRODUCT DESCRIPTION: 5.400 LB/PC .500 LB/-0 LB 1.312 OD X .085 WALL ESRT	
KAISER ORDER NUMBER: 320031	LINE ITEM: 001	SHIP DATE: 04/01/2016	KAISER LOT NUMBER: 50751-323	ALLOY: 6061	TEMPER: O
WEIGHT SHIPPED: 16135.000 LB	QUANTITY: 2913.000 PCS	B/L NUMBER: 004991	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 13.984 FT
SHIP TO:  PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA			SOLD TO:  MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA		



### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS(KSI)	YTS(KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-323	0001	0002	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0003	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0004	17.3	5.4	27.2	NA N/A	N/A	N/A
50751-323	0001	0005	18.0	6.1	28.0	NA N/A	N/A	N/A
50751-323	0001	0006	17.4	5.7	26.4	NA N/A	N/A	N/A
50751-323	0001	0007	17.9	6.2	27.6	NA N/A	N/A	N/A
50751-323	0001	0008	17.5	5.8	26.6	NA N/A	N/A	N/A
50751-323	0001	0009	17.7	5.7	28.6	NA N/A	N/A	N/A
50751-323	0001	0010	16.9	5.6	25.2	NA N/A	N/A	N/A
50751-323	0001	0011	17.6	5.8	27.9	NA N/A	N/A	N/A
50751-323	0001	0012	17.8	6.9	27.4	NA N/A	N/A	N/A
50751-323	0001	0013	18.1	6.1	27.2	NA N/A	N/A	N/A
50751-323	0001	0014	17.4	5.7	28.3	NA N/A	N/A	N/A
50751-323	0001	0015	17.0	5.6	28.6	NA N/A	N/A	N/A
50751-323	0001	0016	18.2	5.8	26.6	NA N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F75366	.58	.29	.22	.06	.98	.08	.05	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

ASTM-B241-12 NON-STENCILED ASTM-B221-13 ASTM-B345-11 AMS-QQ-A-200/8 97(R07) TYPE I  
UNS#A96061 Also conforms to EN 10204 3.1

TEST REPORTS  
ACCEPTED BY  
49354489  
AUG 09 2016

*LB*  
TW METALS

**KAISER**  
**ALUMINUM**  
FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
2425 STEVENS DRIVE  
RICHLAND, WA 99352

**Miscellaneous Notes**

MANUFACTURED IN USA MELTED IN USA  
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY  
OF ITS COMPOUNDS ARE UTILITZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER

*Jph*

**TEST REPORTS  
ACCEPTED BY**

**AUG 09 2016**

*LB*  
**TW METALS**

Plant Serial: 00013829  
Kaiser Order Number: 320031  
Line Item: 001



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRC 500W.035

PO / BATCH NO: PO35848/M137286

DATE: 17-04-17

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 20'  
 QUANTITY INSPECTED: 20'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .035  
 THICKNESS RECEIVED: .035  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL	(Y)	N	
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT MATERIAL	(Y)	N	AK + m 1213
CORRECT REF # TO LINK CERT	(Y)	N	HF # XX1506597
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.

RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

*testers located in the Quality Office*

QC 18 INSPECTION

ENGINEERING SIGNOFF (if required)

INSPECTED BY: CB  
 DATE: 17-04-17

SIGNED OFF BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in:

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3047RO.500W.049

PO / BATCH NO. P035848/14137286

DATE: 17-04-17

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 20'  
 QUANTITY INSPECTED: 20'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .049  
 THICKNESS RECEIVED: .046  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	Astm A213
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	HT # YX1506712
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

<b>QC 18 INSPECTION</b>	<b>ENGINEERING SIGNOFF (if required)</b>
INSPECTED BY: <u>CB</u> DATE: <u>17-04-17</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in:

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRO.750W.044  
 DATE: 17-04-17

PO / BATCH NO: 0035848/M137286

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 120'  
 QUANTITY INSPECTED: 120'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .044  
 THICKNESS RECEIVED: .044  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ASTM A213
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	H+H YX1501783
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

## QC 18 INSPECTION

## ENGINEERING SIGNOFF (if required)

INSPECTED BY: CB 9-B9

SIGNED OFF BY: \_\_\_\_\_

DATE: 17-04-17

DATE: \_\_\_\_\_

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304T B0.875W.065  
 DATE: 17-04-17

PO / BATCH NO PO35848/M13728C

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 20'  
 QUANTITY INSPECTED: 20'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .065  
 THICKNESS RECEIVED: .065  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	ASTM A213
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	HT # YX1502577
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>CS</u>	<u>8</u>	SIGNED OFF BY: _____	
DATE: <u>17-04-17</u>	<u>9:50</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in:

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M430NT0.750W049  
 DATE: 17-04-17

PO / BATCH NO.: 1035848/M137286

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 24'  
 QUANTITY INSPECTED: 24'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .049  
 THICKNESS RECEIVED: .049  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	HT # 598618
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> <span style="float: right;">JAS 9 3-89</span> DATE: <u>17-04-17</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606H6T0.005W065

PO / BATCH NO P035848/M137286

DATE: 17-04-17

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 48'  
 QUANTITY INSPECTED: 48'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .065  
 THICKNESS RECEIVED: .062  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y N	ASTM B210
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	HF# F00218045
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>OB</u>		SIGNED OFF BY: _____	
DATE: <u>17-04-17</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6+1.000W.005  
 DATE: 1704-17

PO / BATCH NO 035848/113728C

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 24'  
 QUANTITY INSPECTED: 24'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .005  
 THICKNESS RECEIVED: .005  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	N	ASTM B210
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	HT # F-00034133
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

<b>QC 18 INSPECTION</b>	<b>ENGINEERING SIGNOFF (if required)</b>
INSPECTED BY: <u>KB</u> DATE: <u>17-04-17</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061-T6 3125W.058

PO / BATCH NO. PO35848/1137286

DATE: 17-04-17

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 24'  
 QUANTITY INSPECTED: 24'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .058  
 THICKNESS RECEIVED: .058  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORROSION	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
PHOTO REQUIRED	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	ASTM B210
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	HT #388604
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>OB</u>	<u>9</u>	SIGNED OFF BY: _____	
DATE: <u>17-04-17</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

# PURCHASE ORDER

Purchase Order ID PO35848

Purchase Order Date 4/5/2017

PO Print Date 4/5/2017

Page Number 1 of 5

Order From :

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

VU-TWM001

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

E-MAIL

APR 05 2017

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	4/13/2017	Yes	20.00 f	\$1.50	\$30.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269			4/13/2017				
Line Total:							\$30.00
2	M304TR0.500W.049	304 RD Tube .500 x .049W	4/13/2017	Yes	20.00 f	\$2.80	\$56.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269			4/13/2017				
Line Total:							\$56.00
3	M304TR0.675W.091	304 RD Tube .675 x .091W	4/13/2017	Yes	20.00 f	\$5.00	\$100.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269			4/13/2017				

Note:

4/5/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO35848

Purchase Order Date 4/5/2017

PO Print Date 4/5/2017

Page Number 2 of 5

**Order From :**

VU-TWM001

**Ship To :** DART AEROSPACE LTD

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone**

585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

Line Total:

\$100.00

4

M304TR0.750W.049

304 RD Tube .750 x .049W

4/13/2017

Yes

4/13/2017

120.00

\$2.10

\$252.00

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING  
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

Line Total:

\$252.00

5

M304TR0.875W.065

304 round tube .875 x  
.065w

4/13/2017

Yes

4/13/2017

20.00

\$4.20

\$84.00

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING  
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

Line Total:

\$84.00

Note:

4/5/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO35848

Purchase Order Date 4/5/2017

PO Print Date 4/5/2017

Page Number 3 of 5

Order From :

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Contact Name

Vendor Phone

585 768 5600

Ship To Contact

Ship To Phone

Ship Via:

YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

6 M4130NT0.750W.049

4130 RD Tube .750  
x.049W

4/13/2017

20.00

\$6.00

\$120.00

Yes

4/13/2017

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING  
AS PER MIL-T-6736 OR AMS 6371/6360/6361  
6362/6373/6374

rec'd 24x

144.00

Line Total:

\$120.00

7 M6061T6T0.3125W.058

ALUM TUBE .3125 x  
.058w

4/13/2017

20.00

\$2.50

\$50.00

Yes

4/13/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

rec'd 24x

60.00

SP 174-12.

Line Total:

\$50.00

Note:

4/5/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

# PURCHASE ORDER

Purchase Order ID PO35848

Purchase Order Date 4/5/2017  
PO Print Date 4/5/2017

Page Number 4 of 5

## Order From :

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

## Contact Name

Vendor Phone 585 768 5600

## Ship To Contact

## Ship To Phone

Ship Via: YRC COLLECT

## Ship Acct:

## Buyer

Chantal Lavoie

## Customer POID

Customer Tax # 10127-2607

## Terms

Net 30

## Currency

USD

## FOB

FCA - (Free Carrier)

8	M6061T6T0.625W.065	6061-T6 RD Tube .625 x.065W	4/13/2017	0.00	\$0.00	\$0.00
			Yes	f		
			4/13/2017			

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

M6061T6T0.625W.065	4/13/2017	40.00	\$3.15	\$126.00
	4/13/2017	f		151.20

*new 48F*

Line Total: \$126.00

9	M6061T6T1.000W065	6061T6 RD TUBE 1.00 x .065w	4/13/2017	20.00	\$2.96	\$59.20
			Yes	f		
			4/13/2017			

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

*new 24x*

*SP 17-12*

Line Total: \$59.20

Note:

4/5/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35848**

Purchase Order Date 4/5/2017

PO Print Date 4/5/2017

Page Number 5 of 5

**Order From :**

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone**

585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA (Free Carrier)

10 71401-45

PROCUREMENT  
QUALITY CLAUSES

4/13/2017

1.00

\$0.00

\$0.00

No

4/13/2017

**Procurement Quality Clauses**

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

2017-4-11

**Line Total:**

**\$0.00**

**PO Total:**

**\$877.20**

U

CL

**Note:** Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

**Change Nbr:**

1

**Change Date:**

4/5/2017